

**MICHIGAN STATE**  
**UNIVERSITY**

# Beta Presentation

## Battle Aircraft Position Share

### The Capstone Experience

Team Boeing

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*From Students...  
...to Professionals*

# Project Overview

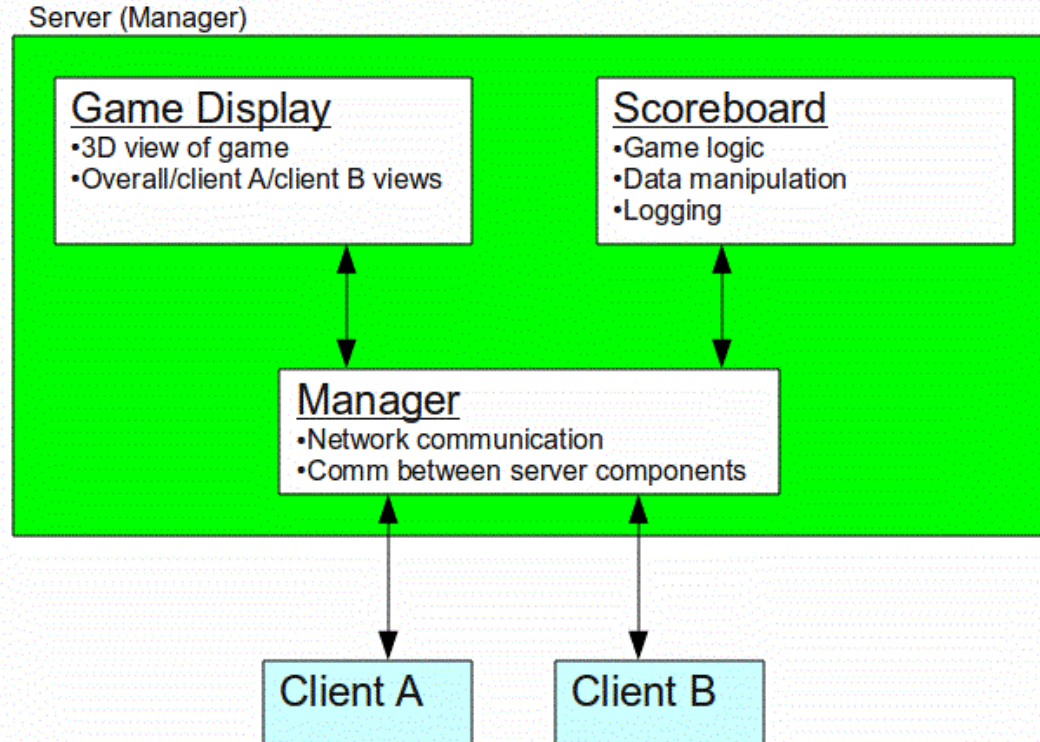
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- Similar to 3D battleship
- Players use radar scans to find enemy targets
- Firing is turn-based
- Scanning and movement in real time
- Weather affects scanning
- Deal with information overload

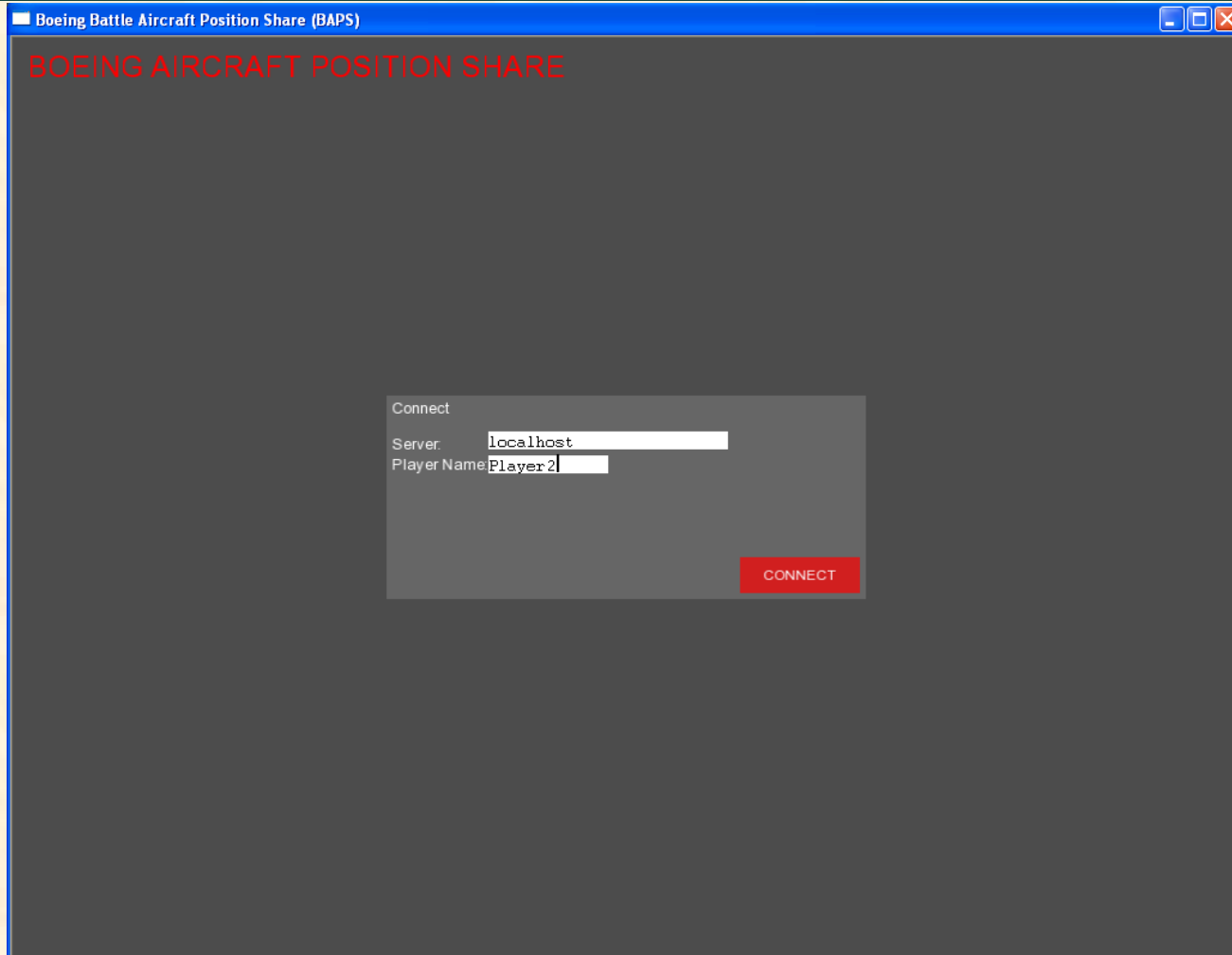


# System Architecture

## Server Structure and Basic Communication



# Start Screen



# Unit Placement

Boeing Battle Aircraft Position Share (BAPS)

**UNIT PLACEMENT**  
Player1  
Game Left: 00:05:00  
Game Time: 00:00:00  
Turn Left: 00:00:15  
Timeout Left: 00:00:00  
Turn: 0  
Targets Hit: 0  
Hits Taken: 0  
Enemy Timeouts: 0  
Timeouts Left: 10

Transmitters  
Receivers

SHOW MARKERS: ON  
SHOW PLATFORMS: ON  
SHOW RECEIVERS: ON  
SHOW TRANSMITTERS: ON

TIMEOUT  
UNIT PLACE  
HIGHLIGHT  
SCAN  
MOVE  
FIRE

Setup Units  
platform: select plane: select  
origin: (X, Y, Z) speed: 0  
direction: select origin: (X, Y, Z)  
heading: 0  
pitch: 0 OR dest: (X, Y, Z)

PLACE PLACE START



# Timeout Window

The screenshot displays the Boeing Battle Aircraft Position Share (BAPS) interface. The window title is "Boeing Battle Aircraft Position Share (BAPS)". On the left side, there is a panel with the following information:

- YOUR TURN**
- Game Left: 00:19:48
- Game Time: 00:00:12
- Turn Left: 00:00:03
- Timeout Left: 00:00:00
- Turn: 0
- Targets Hit: 0
- Hits Taken: 0
- Enemy Timeouts: 0
- Timeouts Left: 10

Below this information are two buttons: "Transmitters" (highlighted in yellow) and "Receivers" (greyed out). Further down are four checkboxes, all of which are checked:

- SHOW MARKERS: ON
- SHOW PLATFORMS: ON
- SHOW RECEIVERS: ON
- SHOW TRANSMITTERS: ON

At the bottom left of the panel is a vertical stack of action buttons: "TIMEOUT" (green), "UNIT PLACE" (grey), "HIGHLIGHT" (purple), "SCAN" (yellow), "MOVE" (blue), and "FIRE" (red).

The main area of the window shows a 3D wireframe grid representing a battlefield. The grid has X and Y axes ranging from 0 to 7. A blue reticle is visible in the upper right corner of the grid area. A greyed-out aircraft model is visible on the right side of the grid.

At the bottom of the window, a "Request Timeout" dialog box is open, asking "Are you sure you wish to call a timeout?". It shows "Timeouts Left: 10" and a "YES" button. To the right of the dialog box, the text "[00:00:00] Begin your turn" is displayed.



# Scan Window

Boeing Battle Aircraft Position Share (BAPS)

**YOUR TURN**

Game Left: 00:17:46  
Game Time: 00:02:14  
Turn Left: 00:00:02  
Timeout Left: 00:00:00  
Turn: 0  
Targets Hit: 0  
Hits Taken: 0  
Enemy Timeouts: 0  
Timeouts Left: 10

Transmitters  
Receivers

SHOW MARKERS: ON  
SHOW PLATFORMS: ON  
SHOW RECEIVERS: ON  
SHOW TRANSMITTERS: ON

TIMEOUT  
UNIT PLACE  
HIGHLIGHT  
SCAN  
MOVE  
FIRE

Scan  
plane:   
target:

SCAN

[00:00:00] Begin your turn  
[00:00:14] Your turn is over  
[00:00:29] Begin your turn  
[00:00:45] Your turn is over  
[00:01:00] Begin your turn  
[00:01:15] Your turn is over  
[00:01:30] Begin your turn  
[00:01:45] Your turn is over  
[00:02:00] Begin your turn



# Move Window

Boeing Battle Aircraft Position Share (BAPS)

**ENEMY TURN**

Game Left: 00:16:36  
Game Time: 00:03:24  
Turn Left: 00:00:06  
Timeout Left: 00:00:00  
Turn: 0  
Targets Hit: 0  
Hits Taken: 0  
Enemy Timeouts: 0  
Timeouts Left: 10

Transmitters  
Receivers

SHOW MARKERS: ON  
SHOW PLATFORMS: ON  
SHOW RECEIVERS: ON  
SHOW TRANSMITTERS: ON

TIMEOUT  
UNIT PLACE  
HIGHLIGHT  
SCAN  
MOVE  
FIRE

Move

plane: echo  
speed: 025  
heading: 0  
pitch: 0 OR dest: (2, 3, 2)

MOVE

[00:00:45] Your turn is over  
[00:01:00] Begin your turn  
[00:01:15] Your turn is over  
[00:01:30] Begin your turn  
[00:01:45] Your turn is over  
[00:02:00] Begin your turn  
[00:02:15] Your turn is over  
[00:02:30] Begin your turn  
[00:02:45] Your turn is over  
[00:03:00] Begin your turn  
[00:03:15] Your turn is over





# Highlight Window

Boeing Battle Aircraft Position Share (BAPS)

**ENEMY TURN**

Game Left: 00:01:24  
Game Time: 00:03:36  
Turn Left: 00:00:04  
Timeout Left: 00:00:00  
Turn: 0  
Targets Hit: 0  
Hits Taken: 0  
Enemy Timeouts: 0  
Timeouts Left: 10

Transmitters  
Receivers

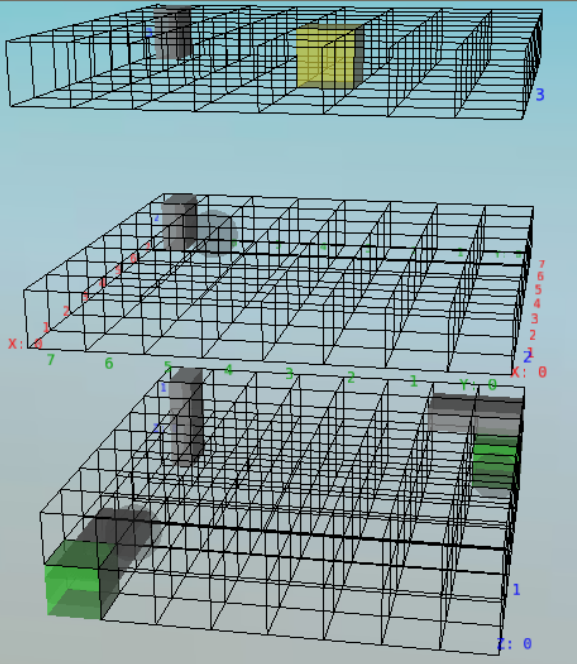
SHOW MARKERS: ON  
SHOW PLATFORMS: ON  
SHOW RECEIVERS: ON  
SHOW TRANSMITTERS: ON

TIMEOUT  
UNIT PLACE  
HIGHLIGHT  
SCAN  
MOVE  
FIRE

Scan Highlight  
target (3,3,3)

[00:01:35] Your turn is over  
[00:01:50] Begin your turn  
[00:02:05] Your turn is over  
[00:02:20] Begin your turn  
[00:02:25] Firing  
[00:02:25] FIRE HIT!  
[00:02:25] Your turn is over  
[00:02:39] Begin your turn  
[00:02:54] Your turn is over  
[00:03:09] Begin your turn  
[00:03:24] Your turn is over

MISS HIT CLEAR



# Fire Window

Boeing Battle Aircraft Position Share (BAPS)

**YOUR TURN**

Game Left: 00:04:35  
Game Time: 00:00:25  
Turn Left: 00:00:05  
Timeout Left: 00:00:00  
Turn: 0  
Targets Hit: 0  
Hits Taken: 0  
Enemy Timeouts: 0  
Timeouts Left: 10

Transmitters  
Receivers

SHOW MARKERS: ON  
SHOW PLATFORMS: ON  
SHOW RECEIVERS: ON  
SHOW TRANSMITTERS: ON

TIMEOUT  
UNIT PLACE  
HIGHLIGHT  
SCAN  
MOVE  
FIRE

Fire  
target (1, 2, 3)

FIRE

[00:00:14] Begin your turn



# Player Hit

Boeing Battle Aircraft Position Share (BAPS)

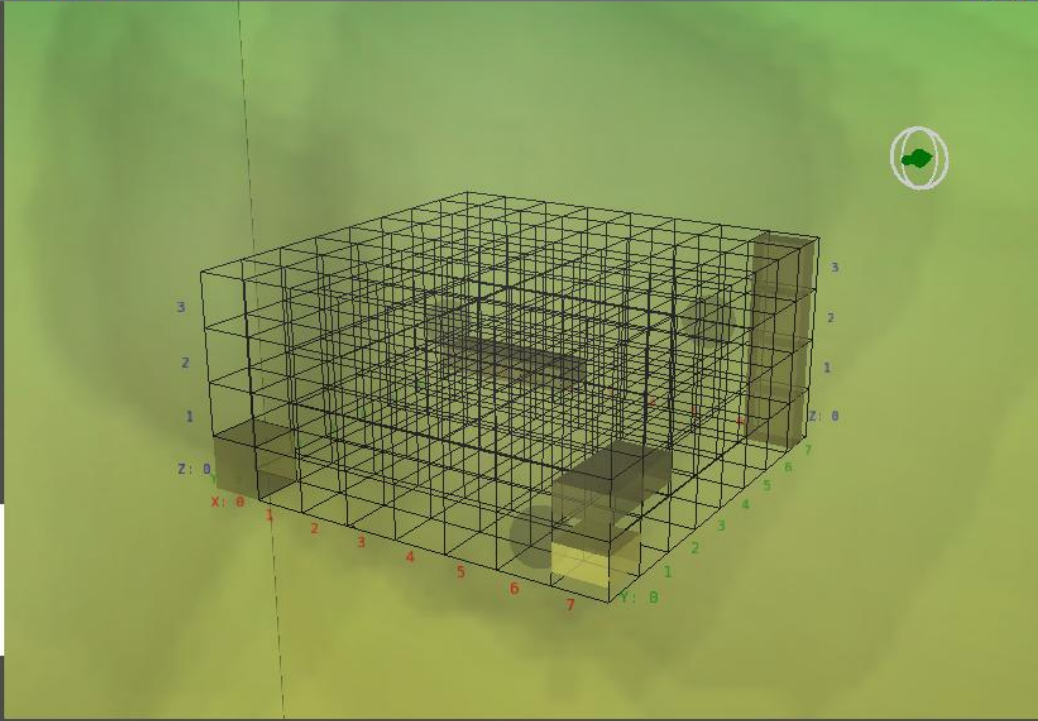
YOUR TURN

Game Left: 00:03:14  
Game Time: 00:01:46  
Turn Left: 00:00:04  
Timeout Left: 00:00:00  
Turn: 0  
Targets Hit: 0  
Hits Taken: 0  
Enemy Timeouts: 0  
Timeouts Left: 10

Transmitters  
Receivers

SHOW MARKERS: ON  
SHOW PLATFORMS: ON  
SHOW RECEIVERS: ON  
SHOW TRANSMITTERS: ON

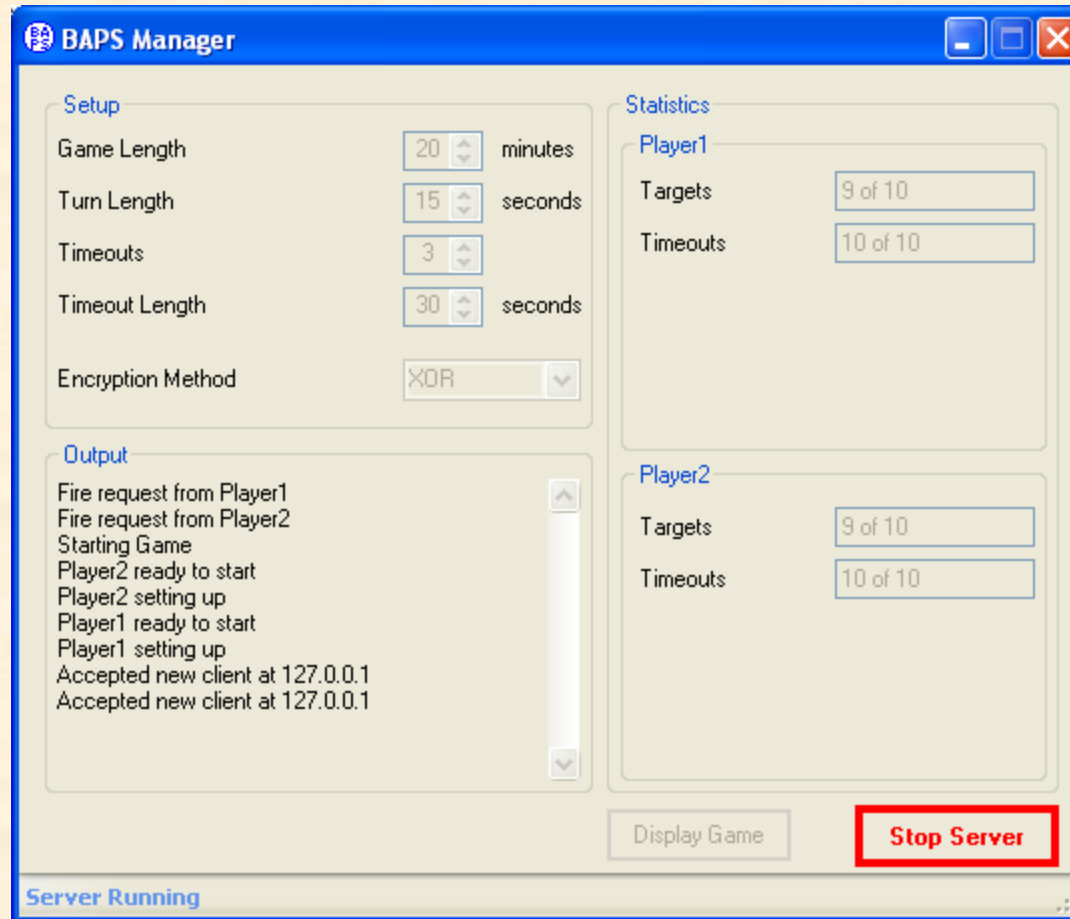
TIMEOUT  
UNIT PLACE  
HIGHLIGHT  
SCAN  
MOVE  
FIRE



```
[00:00:14] Begin your turn
[00:00:29] Your turn is over
[00:00:45] Begin your turn
[00:00:56] Firing
[00:00:56] [FIRE MISS] Coords here
[00:00:56] Your turn is over
[00:01:06] [TARGET HIT] You have been hit by Player2
[00:01:06] Begin your turn
[00:01:20] Your turn is over
[00:01:35] Begin your turn
```

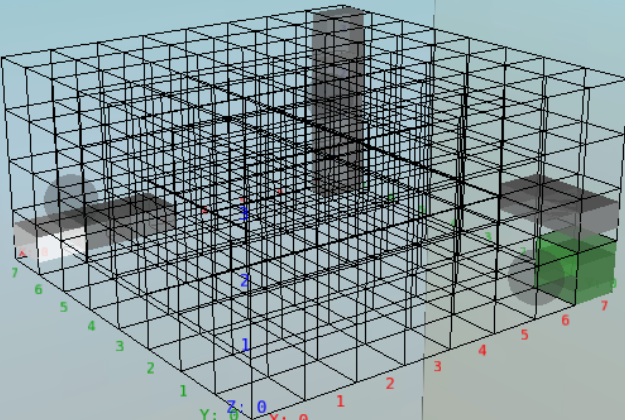


# Manager



# Manager Game View

Boeing Battle Aircraft Position Share (BAPS) - Manager



Game Stats

|                    |  |
|--------------------|--|
| Turn: 0            | Player Stats: <input type="text" value="Player2"/> |
| Game State: 0      | Name: Player2                                      |
| Max Game Time: 20  | Timeouts: 10                                       |
| Max Turn Time: 15  | Remaining Targets: 9                               |
| Timeout Time: 30   | Trans Remaining: 7                                 |
| Total Targets: 0   | Recvr Remaining: 7                                 |
| Total Timeouts: 10 | Scan Misses: 0                                     |
|                    | Scan Hits: 0                                       |
|                    | Fire Hits: 1                                       |
|                    | Fire Misses: 0                                     |



# What's left to do?

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- Clean up interface bugs
- Finish implementing help screen
- Keyboard shortcuts
- Add extra statistic logging
- Polish and balancing
- Lots and lots of play testing

